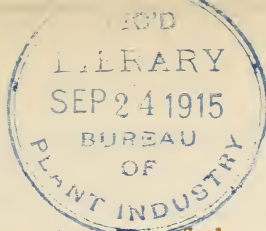


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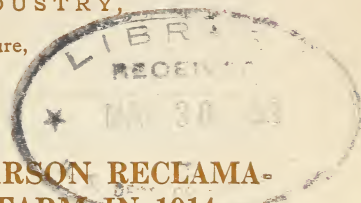
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THE WORK OF THE TRUCKEE-CARSON RECLAMATION PROJECT EXPERIMENT FARM IN 1914.

By F. B. HEADLEY, *Farm Superintendent.*

INTRODUCTION.

This circular is issued for the purpose of reporting the progress made in the investigations being conducted at the Truckee-Carson Experiment Farm and is supplementary to reports previously published.¹

WEATHER RECORDS.

Weather records were kept in cooperation with the United States Weather Bureau, the Biophysical Laboratory of the Bureau of Plant Industry, and the University of Nevada. For the purpose of studying frost conditions, records of the minimum temperatures were kept by W. W. Cogswell, of Summit ranch, near Fernley, and by W. A. Van Voorhis, superintendent of the Indian school near Fallon.

¹ The publications in reference to the Truckee-Carson Reclamation Project issued by the Bureau of Plant Industry are as follows:

The Truckee-Carson Experiment Farm, by C. S. Scofield and S. J. Rogers, 1909. (Bulletin 157.)

Bacteriological studies of the soils of the Truckee-Carson Irrigation Project, by K. F. Kellerman and E. R. Allen, 1911. (Bulletin 211.)

Agricultural observations on the Truckee-Carson Irrigation Project, by F. B. Headley and Vincent Fulkerson, 1911. (Circular 78.)

The nematode gallworm on potatoes and other crop plants in Nevada, by C. S. Scofield, 1912. (Circular 91.)

Agriculture on the Truckee-Carson project: Vegetables for the home garden, by F. B. Headley and Vincent Fulkerson, 1913. (In Circular 110.)

Commercial truck crops on the Truckee-Carson project, by F. B. Headley and Vincent Fulkerson, 1913. (In Circular 113.)

Climatic conditions on the Truckee-Carson project, by F. B. Headley, 1913. (In Circular 114.)

Fruit growing on the Truckee-Carson project, by F. B. Headley and Vincent Fulkerson, 1913. (In Circular 118.)

The work of the Truckee-Carson Experiment Farm in 1912, by F. B. Headley, 1913. (In Circular 122.)

The work of the Truckee-Carson Reclamation Project Experiment Farm in 1913, by F. B. Headley, 1914. (Circular, Western Irrigation Agriculture.)

NOTE.—This circular embodies a report on the work of the Truckee-Carson Experiment Farm near Fallon, Nev., in 1914, and is intended primarily for distribution among the settlers on and others interested in that project.

TABLE I.—*Summary of climatological observations at the Truckee-Carson Experiment Farm, 1906 to 1914, inclusive.*

PRECIPITATION (INCHES).													
Year, etc.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Average for 9 years, 1906 to 1914.....	0.88	0.31	0.43	0.47	0.52	0.44	0.22	0.17	0.25	0.34	0.29	0.52	4.84
For the year 1914....	2.28	.42	0	.25	.04	.56	T.	0	.07	.13	0	.27	4.02
EVAPORATION (INCHES).													
Average for 7 years, 1908 to 1914.....	1.47	1.90	3.98	6.08	8.37	9.59	10.64	9.80	6.53	3.88	2.10	0.80	65.14
For the year 1914....	1.25	1.80	5.30	5.36	9.70	9.09	11.12	11.47	7.43	4.67	2.06	.90	70.15
DAILY WIND VELOCITY (MILES PER HOUR).													
Average, for 6 years, 1909 to 1914.....	3.74	3.52	4.64	5.54	4.97	4.54	3.54	3.34	3.34	3.07	2.97	1.92	3.76
For the year 1914....	4.50	3.0	3.80	4.80	3.70	4.0	3.0	2.70	3.80	2.60	2.0	2.50	3.36
ASPECT OF THE SKY (DAYS).													
Prior to 1914:													
Clear.....	11.5	15.0	17.9	18.9	18.6	21.1	21.7	24.4	22.0	23.3	18.4	13.3	226.1
Partly cloudy....	10.1	8.0	8.5	6.9	9.3	4.8	6.0	3.7	4.7	2.9	5.6	6.9	77.4
Cloudy.....	9.4	5.0	4.6	4.2	3.1	4.1	3.3	2.9	3.3	4.8	6.0	10.8	61.5
For the year 1914:													
Clear.....	11	19	22	14	13	17	20	29	22	17	17	6	207
Partly cloudy....	13	2	5	7	14	10	10	1	6	7	11	12	98
Cloudy.....	7	7	4	9	4	3	1	1	2	7	2	13	60
TEMPERATURE (°F.).													
Absolute maximum:													
9 years, 1906 to 1914.....	70	72	79	89	102	101	103	103	95	88	81	72	.....
For 1914.....	58	68	72	78	92	97	97	102	89	83	75	53	.....
Absolute minimum:													
9 years, 1906 to 1914.....	-15	-12	9	13	21	33	38	36	26	15	- 1	- 3	.....
For 1914.....	13	17	20	24	36	33	50	41	29	22	10	- 2	.....
Mean:													
9 years, 1906 to 1914.....	32.2	37.0	43.5	50.9	56.7	64.7	73.3	71.4	61.1	50.4	40.4	31.1	.....
For 1914.....	37.2	38.4	46.2	50.8	61.4	63.8	73.4	72.9	61.6	52.3	39.6	26.1	.....
KILLING FROSTS.													
Year.	Last in spring.	First in fall.	Frost-free period.	Year.	Last in spring.	First in fall.	Frost-free period.						
1906.....	May 31	Oct. 4	Days. 125	1912.....	May 22	Sept. 25	125						
1907.....	May 14	Sept. 19	127	1913.....	May 13	Sept. 23	132						
1908.....	May 30	Sept. 25	117	1914.....	Apr. 24	Sept. 9	137						
1909.....	May 24	Sept. 22	120	Average.....	May 19	Sept. 21	125						
1910.....	May 16	Oct. 13	119										
1911.....	May 27	Sept. 18	113										

The last killing frost in spring occurred April 24, a much earlier date than usual. The average date of the last spring frost is May 19, so that the frost-free period really began 25 days earlier than ordinarily. This was offset, however, by the early date of the first autumn frost, on September 9. Since the keeping of records began

at Fallon there has been no case of the frost-free period coming at so early a date in spring or ending so early in autumn. The frost-free period in 1914 was from April 24 to September 9, whereas in normal years it is from May 19 to September 21.

The total rainfall and wind velocity were somewhat less than normal, while the evaporation was slightly greater, due, no doubt, to the greater number of dry, hot days, which are favorable to evaporation. On the whole, the climatic conditions were favorable to crop growth, and for the most part abundant crops were obtained.

EFFECT OF ELEVATION ON MINIMUM TEMPERATURE.

Records of the minimum temperature have been kept, as stated, at Summit ranch, $4\frac{1}{2}$ miles east of Fernley, and at the Indian school, 10 miles east of Fallon. These records were kept in cooperation with the experiment farm for the purpose of determining the effect of elevation on the minimum temperature during the critical periods of spring and autumn.

Table II shows the average minimum temperature for each month, as far as the records were complete, during 1912, 1913, and 1914 for the three stations mentioned. These results clearly indicate that frost would be less likely to occur on the higher elevations.

TABLE II.—*Mean minimum temperatures (° F.) for three years at Summit ranch, Fallon, and the Indian school.*

[Elevations above sea level: Summit ranch, 4,180 feet; Fallon (experiment farm), 3,970 feet; the Indian school, 3,915 feet.]

Month.	1912			1913			1914		
	Summit ranch.	Fallon.	Indian school.	Summit ranch.	Fallon.	Indian school.	Summit ranch.	Fallon.	Indian school.
January.....		20	20	16	14	13	28	27	26
February.....		21	19		17	18	27	25	23
March.....	29	26	25		24	25	32	28	28
April.....	35	32	32	35	32	32	38	36	36
May.....	44	40	40	47	42	42	47	44	43
June.....	51	47	47	51	48	47	49	47	47
July.....	58	52		58	53	53	59	54	53
August.....	56.	48	49	58	54	55	58	53	51
September.....		40	42	51	46	45	48	42	41
October.....	37	32	31	37	32	30	39	36	
November.....	28	24	24	32	29	27	25	21	
December.....	19	14	14	22	21	19	16	15	

AGRICULTURAL CONDITIONS.

The season of 1914 was favorable to the growth of most crops. Plenty of water was available throughout the year, and the growing season began earlier than usual. The yield of alfalfa and some other crops was lessened to some extent by grasshoppers, which appeared in unusual numbers.

The average yield per acre of alfalfa, barley, and wheat was slightly greater and of potatoes and onions markedly greater than in

1913. Table III shows the acreage and yields of the main money-producing crops and the total acres and crop values of all crops raised on the project during the past three years, according to the figures obtained from the United States Reclamation Service. It will be seen that the acreage in alfalfa has constantly increased, while the number of acres in barley, wheat, potatoes, and onions has been steadily reduced. The reduction in the total irrigated acreage in 1914 is due to the abandonment for agricultural purposes of approximately 7,000 acres of land on the Calvada and Comstock ranches, which would indicate that there was an actual increase of approximately 3,600 acres of irrigated land on other parts of the project.

TABLE III.—*Acreage, yields, and farm values of the main money-producing crops grown on the Truckee-Carson project.*

CROPS IN 1914.

Crop.	Area.	Unit of yield.	Yield.			Farm values per acre.		
			Total.	Per acre.		Per unit of yield.	Total.	Average.
				Average.	Maximum.			
	<i>Acres.</i>							
Alfalfa hay.....	13,212	Ton.....	59,873	3.28	7	\$5.00	\$299,365	\$16.43
Alfalfa (planted in 1914).....	3,344	.....do.....	1,129	.3	2	5.00	5,645	1.68
Hay other than alfalfa.....	1,564	.....do.....	1,504	.9	.....	3.00	4,512	2.88
Wheat.....	1,446	Bushels.	29,164	20.1	77	1.35	39,371	27.22
Barley.....	1,329	.....do.....	31,084	23.4	60	.60	18,650	14.03
Oats.....	417	.....do.....	18,000	43.0	83	.40	7,200	17.26
Potatoes.....	283	.....do.....	23,800	84.0	277	.48	11,424	40.36
Pasture.....	19,398	.....do.....	.....	.....	.....	.....	23,500	1.21
Garden and miscellaneous.....	646	.....do.....	.....	.....	.....	.....	26,791	41.44
Onions.....	20	Bushels.	7,600	380.0	563	.60	4,560	228.00
Less duplications.....	7,374	.....do.....	.....	.....	.....	.....	.....	.....
Total.....	39,285	.....do.....	.....	.....	.....	.....	441,018	.....
Average value per acre.....	.....	.....do.....	.....	.....	.....	.....	.....	18.22

SUMMARIZED COMPARISON OF LEADING CROPS IN 1912, 1913, AND 1914.

Year.	Alfalfa.		Barley.		Wheat.		Potatoes.		Onions.		Total.	
	Acres.	Yield per acre.	Acres.	Yield per acre.	Acres.	Yield per acre.	Acres.	Yield per acre.	Acres.	Yield per acre.	Acres.	Crop value.
		<i>Tons.</i>		<i>Bushels.</i>		<i>Bushels.</i>		<i>Bushels.</i>		<i>Bushels.</i>		
1912..	12,912	2.6	2,259	33.1	2,484	16.3	483	135.9	.....	.....	36,620	\$469,882
1913..	13,960	3.2	1,880	23.0	1,590	19.0	416	71.6	38	287.2	42,943	555,007
1914..	16,556	3.3	1,329	23.4	1,446	20.1	283	84.0	20	380.0	39,285	441,018

The dairy industry has continued to grow in a very satisfactory manner. The number of dairy cows on the project in the autumn of 1914 was ascertained by the Reclamation Service to be 1,503. The total amount of butter fat purchased by the local creamery during the year was 165,546 pounds, for which \$45,242.25 was paid. The average price per pound was 27.3 cents. The average amount paid for butter fat per month was \$3,770.12.

One of the principal handicaps to the dairy business at the present time is the prevalence of contagious abortion among some of the dairy herds of the project. It has been said by authorities on the subject that unless this disease is kept in check it will be a source of greater financial loss to the dairy industry than any other of the animal diseases.

With the exception of alfalfa, the market price of all farm produce has been good. The price of barley and wheat has been above normal. There has been little demand for alfalfa, and many farmers have been unable to make sales of this crop even when offering it at very low prices.

The low price of alfalfa has resulted in an increased demand for dairy stock and for live stock for feeding purposes. It seems certain that live-stock production must soon become one of the main industries of the project.

DISTRIBUTION OF TREES AND SHRUBS.

It has been the practice of the experiment farm during the past four years to grow large numbers of certain trees and shrubs for distribution to the people residing within the limits of the project. The school boards of the project especially are invited to take advantage of this opportunity to secure desirable trees and shrubs for the ornamentation of their school grounds. For the most part, only those varieties are distributed which experience has shown are well adapted to the soil and climatic conditions of the project. Distributions were made in 1914 to 81 farmers and residents of Fallon, as follows: 348 Carolina poplars, 129 Norway poplars, 119 Chinese poplars, 181 Chinese willows, 146 *Tamarix indica*, 42 *Tamarix africana*, 16 *Tamarix gallica*, 1,755 native tamarix (mostly cuttings), 81 Karagatch elm, 9 white elm, 4 hackberry, 8 jack pine, 18 box elders, 560 Russian oleaster, 5 Russian mulberry, 8 Ponderosa pine, 15 piñon pine, 114 apples, 14 pears, 2 plums.

ALFALFA.

There were approximately 13 acres of alfalfa on the experiment farm in 1913. The average yield of all plats was slightly over 4 tons per acre of air-dried hay ready for the stack. The yields of individual plats ranged from less than a ton to nearly 9 tons per acre. This is an exceedingly wide range and is the result of the spotted character of the soil, some plats including a larger proportion of unproductive soil than others. As in previous years, the yield of the first cutting was greater than the yield of either of the following cuttings. The percentage of the three cuttings of the entire crop was 43, 35, and 22, respectively.

ALFALFA VARIETIES.

Eleven varieties of alfalfa grown from seed furnished by the Office of Forage-Crop Investigations are grown in a duplicate planting of rows 30 inches apart and varying in length from 326 to 330 feet. The results of a test covering three years is shown in Table IV. The results have been quite uniformly favorable to the Grimm, which is one of the hardiest varieties known. The yields of the Western Grown are so close to those of the Grimm that the difference may not be significant, and a duplication of the test might place the Western Grown variety in the lead. The Arabian, Provence, and Elche varieties are clearly unsuited to local conditions. Their inferiority can be plainly seen by observation in the field, as well as by noting yields.

TABLE IV.—*Yields of alfalfa varieties in row tests at the Truckee-Carson Experiment Farm in 1912, 1913, and 1914.*

Variety.	Yield per 100-foot row (pounds).				Variety.	Yield per 100-foot row (pounds).			
	1912	1913	1914	Average.		1912	1913	1914	Average.
Caucasian.....	126	99	.....	.....	Montana.....	113	109	120	114
Arabian.....	79	36	72	62	Canadian.....	117	98	122	112
Peruvian.....	114	113	116	114	Western Grown.....	117	109	126	117
Grimm.....	131	110	134	125	Provence.....	96	85	118	100
Sand lucern.....	84	100	120	101	Elche.....	79	80	80	80
Turkestan.....	108	101	110	106					

TEST OF VARIETIES OF FODDER.

Four varieties of fodder corn and one variety of sorghum were planted on the Churchill creamery farm May 25, 1914. They were planted in drills with a common garden planter, in rows 3½ feet apart. The plat had previously been used as a garden, had been fertilized with manure, and was in excellent condition. The crop was harvested on September 18 by hand, and was immediately hauled to the scales and weighed. The green-weight yields (in tons per acre) were as follows: Elephant fodder corn, 19.65; Giant fodder corn, 18.25; Red Cob fodder corn, 17.82; Early Yellow Dent corn, 13.53; Early Amber sorghum, 12.12. The dry yield was not determined. The plantings were made in duplicate.

VARIETY TEST OF WHEAT AND OATS.

The varieties listed below were planted on the farm of L. W. Langford on April 2. The seed of some of these varieties was furnished by the State experiment station at Reno, while that of the others was supplied by the Office of Cereal Investigations of the Bureau of Plant Industry. The wheat was seeded at the rate of about 70 pounds and the oats at about 60 pounds per acre. The Dicklow wheat was

accidentally seeded much thicker than this, and the yield per acre of this variety was probably higher than could be expected ordinarily. All varieties were seeded in duplicate, but the duplicate checks were not thrashed separately.

The soil used in this experiment was fairly uniform in texture, but it had been poorly farmed for a number of years and was not in good condition for the growing of grain crops. It was heavily infested with wild mustard and other weeds, which, together with the poor condition of the soil, resulted in uniformly low yields.

Recommendations as to these varieties can not safely be made from a single year's test. The Bluestem and Little Club varieties gave the best yields. The yield of the Dicklow must be discounted somewhat, as this variety was seeded more heavily than the others. The Bluestem is generally regarded as inferior to the Little Club for the manufacture of flour, being a hard wheat with a relatively high gluten content. The Marquis wheat grown in this test was awarded the first premium at both the Truckee-Carson fair and the State fair at Reno. Although this variety is one of the very best for the manufacture of high-grade flour, it can not be recommended for general planting on the Truckee-Carson project until further tests are made to ascertain its relative productivity.

The Spencer oats and Spencer wheat are varieties that had been grown on the farm previous to its purchase by Mr. Langford.

The yield of the oats was uniformly low. Since the test has been conducted for only one year, it would not be safe to conclude that the best varieties are necessarily those which yielded highest, as shown in Table V.

TABLE V.—*Yields of wheat and oat varieties tested on the farm of L. W. Langford in 1914.*

Wheat varieties.	Area grown.	Yield per acre.		Oat varieties.	Area grown.	Yield per acre.	
		Centals.	Bushels.			Centals.	Bushels.
	<i>Acre.</i>				<i>Acre.</i>		
Dicklow.....	0.100	18.4	30.7	Early Mountain....	0.292	7.8	24.5
Bluestem.....	.170	18.1	30.1	Swedish Select.....	.422	6.6	20.6
Little Club.....	.218	19.1	31.8	Spencer.....	.146	6.5	20.3
Defiance.....	.371	11.5	19.2	White Russian.....	.416	6.4	19.8
Marquis.....	.359	11.0	18.3	Banner.....	.338	5.7	17.8
Spencer.....	.445	9.8	16.3	Abundance.....	.481	5.3	16.6

TEST OF CORN VARIETIES ON THE MERRITT FARM.

The corn varieties were planted on May 28 on black-loam soil in hills 44 inches apart each way. Two rows of each variety were planted, having 36 hills in each row, and the entire series was duplicated. Seed of the best 12 varieties will again be obtained and used in a comparative test in 1915.

The low yields obtained in this experiment are due to field conditions and should not be construed to indicate that a profitable corn crop can not be grown under local conditions. In spite of the short season resulting from the late planting and early frost there were a number of varieties that matured fairly well, so the general belief that there is no dent corn that will mature on the project is not well founded. It is the intention to grow one or more acres of the Disco Ninety-Day, Northwestern Dent, and Gold Medal varieties in 1915. These fields will be on private farms and care will be taken to have them well separated from fields of other varieties, so there will be no possibility of crossing. This will give an opportunity to acclimatize and improve each variety by selection. This work will be conducted in cooperation with individual farmers.

The percentage of loss of moisture was determined for each variety by weighing at harvest time, September 18, and again on October 22. In a general way the percentage of moisture lost will indicate the relative maturity of the varieties.

Table VI shows the yield of the various varieties grown in this test.

TABLE VI.—Yield of ear-corn varieties grown on the Merritt farm in 1914.

Variety.	Purchased from—	Loss of	Height of	Yield per
		moisture.	stalk.	acre.
		<i>Per cent.</i>	<i>Feet.</i>	<i>Pounds.</i>
Disco Ninety-Day.....	Dakota Improved Seed Co.	26	3.8	1,390
Northwestern Dent.....	do.	19	5.0	1,300
Calico.....	Barteldes Seed Co.	34	6.0	1,300
Squaw.....	do.	36	5.0	1,270
Minnesota Early Yellow.....	Northrup, King & Co.	30	5.9	1,258
Gold Medal.....	do.	29	6.4	1,230
Disco Eighty-Five Day.....	Dakota Improved Seed Co.	32	4.0	1,205
Early Pride.....	do.	25	3.6	1,150
Minnesota No. 23.....	do.	26	4.6	1,135
Rustler White Dent.....	Northrup, King & Co.	23	6.6	1,110
Disco Pride.....	Dakota Improved Seed Co.	24	4.6	1,110
Australian White Flint.....	Barteldes Seed Co.	28	4.6	1,110
Colorado Yellow Dent.....	do.	36	5.8	1,095
Extra Early Yellow Flint.....	Northrup, King & Co.	32	4.3	975
Minnesota No. 13.....	do.	34	5.6	890
Smutnose Flint.....	do.	27	4.0	850
Sterling White Dent.....	do.	35	6.4	825
Smoky Dent.....	do.	28	5.0	785
Leaming.....	Barteldes Seed Co.	58	7.0	690
Gebu Flint.....	Dakota Improved Seed Co.	11	2.5	675
Minnesota King.....	Northrup, King & Co.	26	5.4	675
Improved King Philip.....	do.	27	5.3	608
Disco Flint.....	Dakota Improved Seed Co.	34	4.0	608
Longfellow.....	Northrup, King & Co.	34	5.0	554

POTATO VARIETY TEST.

Twenty-three varieties of potatoes were planted on the farm of A. R. Merritt & Son. The land was not ready to plant until May

22, and the seed potatoes sprouted badly, which probably reduced the yield somewhat. The potatoes were planted in drills with a machine. Because of the small quantity of seed of most of the varieties and because of its poor quality, due to sprouting, the results obtained are not of great value except in comparison with results which may be obtained from future tests of these varieties.

It has been noticeable in these tests that the Burbank, the variety most commonly grown in a commercial way in Nevada, is more subject than any other variety to the disfigurement of the tubers due to second growth. The results of the test are shown in Table VII.

TABLE VII.—*Yields of varieties of potatoes grown on the farm of A. R. Merritt & Son in 1914.*

Variety.	Yield per 100-foot row (pounds).		Variety.	Yield per 100-foot row (pounds).	
	Gross.	Market-able.		Gross.	Market-able.
Earliest of All.....	81	61	Colorado Pearl.....	35	27
Early Rose.....	64	31	Irish Cobbler.....	33	25
Rusty Coat.....	60	34	Extra Early Ohio.....	33	17
Seneca Beauty.....	57	47	Rural New Yorker.....	30	21
Early Freeman.....	54	41	New White Victor.....	29	21
Hundredfold.....	50	40	Extra Early Triumph.....	24	14
Gold Coin.....	49	36	Red Ohio.....	23	15
Pride of Multnomah.....	46	31	Early Ohio.....	18	8
Burbank.....	42	30	Livingston.....	17	14
Early White Prizetaker.....	36	29	New Snow.....	15	11
White Beauty.....	36	22	Early Triumph.....	9	4

TOMATO VARIETY TEST.

Eighteen varieties of tomatoes were tested in duplicate lots in 1914. The five highest yielding varieties in this test were the Perfection, Ponderosa, Globe, Acme, and Beauty. Of these varieties all were of desirable shape, size, and flavor with the exception of the Ponderosa, which was inclined to have an irregular shape and was therefore somewhat undesirable. Excluding the small pear-shaped tomatoes, the earliest varieties to mature fruit were the Dwarf Champion and Dwarf Stone. A desirable combination for the home garden would be a few plants of the Dwarf Champion for early use, with the main planting of the Perfection or Globe varieties. To this might be added a few plants of the yellow or red pear-shaped tomatoes, for the making of preserves.

The yields of all varieties were greatly reduced by the early frost, which occurred on September 9, and the order of yield would probably have been considerably changed had the season been longer.

The seeds were planted in the greenhouse on March 4 and the plants were set in the field on May 21.

TABLE VIII.—*Ripening dates and yields of varieties of tomatoes tested on the Truckee-Carson Experiment Farm in 1914.*

Variety.	Date first ripe.	Number of plants.	Yield (pounds).		Variety.	Date first ripe.	Number of plants.	Yield (pounds).	
			Total.	Average per plant.				Total.	Average per plant.
Perfection.....	Aug. 19	37	172	4.6	Yellow Pear.....	July 24	42	121	2.9
Ponderosa.....	Aug. 12	36	160	4.4	Dwarf Champion.....	Aug. 7	90	243	2.7
Acme.....	Aug. 17	43	161	3.7	Coreless.....	Aug. 25	43	117	2.7
Globe.....	do.....	45	167	3.7	Golden Queen.....	Aug. 20	39	106	2.7
Hummer.....	do.....	40	149	3.7	Red Pear.....	Aug. 3	37	83	2.2
Beauty.....	Aug. 21	43	156	3.6	Buckeye State.....	Aug. 31	35	68	1.9
Favorite.....	Aug. 22	41	146	3.6	Dwarf Stone.....	Aug. 8	46	82	1.8
Paragon.....	Aug. 21	37	128	3.5	Magnus.....	Aug. 22	37	63	1.7
Stone.....	Aug. 22	78	256	3.3	Honor Bright.....	Aug. 26	45	30	.7

VARIETY TEST OF ONIONS.

The varieties of onions tested were planted on March 17 on the farm of George Burton. They were not planted in duplicate, and as the area given to each variety is small, little weight can be attached to the results of this test in determining the relative value of the varieties. The varieties tested are shown in Table IX in the order of their productivity.

TABLE IX.—*Yield of onion varieties grown on the farm of George Burton, Fallon, Nev., in 1914.*

Variety.	Yield per acre.	Variety.	Yield per acre.
	<i>Pounds.</i>		<i>Pounds.</i>
Mammoth Yellow Prizetaker.....	51,351	Select Yellow Globe Danvers.....	31,822
Extra Select Ohio Yellow Globe.....	37,466	Southport Yellow Globe.....	30,749
Mammoth Silver King.....	35,670	Australian Brown.....	27,580
Large Red Globe.....	34,961	Southport Large White Globe.....	26,900
Large Red Wethersfield.....	32,878	Flat Danvers.....	26,853
Red Wethersfield.....	32,800		

Mr. Burton was of the opinion that the Prizetaker, Ohio Yellow Globe, and Red Wethersfield will be found to be the most desirable varieties for commercial purposes. All three varieties are good keepers. The Silver King, although productive, did not keep long and is therefore of limited usefulness for commercial purposes.

THE EXPERIMENT-FARM DRAINAGE SYSTEM.

During the year 1913 a tile-drainage system tapping the underground water of fields F and H was estimated to have discharged 56 tons of alkali salts. In 1914 the amount was increased to 114 tons. Early in the year a 10-inch tile was laid from the drainage pump along the south side of field Y to the west side of the farm, making nearly half a mile of 10-inch tile drain. From this drain line

TABLE X.—Quantity and salt content of water pumped from the tile-drainage system on the Truckee-Carson Experiment Farm in 1914.

Month.	Electricity.	Water pumped.		Salt content.	
		Cubic feet.	Pounds.	Average.	Total.
	<i>Kilowatts.</i>			<i>Per cent.</i>	<i>Pounds.</i>
January.....	29	35,960	2,247,500	0.249	5,598
February.....	38	47,120	2,945,000	.278	8,187
March.....	76	94,240	5,890,000	.322	18,966
April.....	92	114,080	7,130,000	.305	21,747
May.....	95	117,700	7,356,250	.313	23,025
June.....	74	91,760	5,728,750	.276	15,811
July.....	148	183,520	11,470,000	.290	33,263
August.....	146	181,040	11,315,000	.351	39,716
September.....	63	78,120	4,882,500	.360	17,577
October.....	48	59,520	3,721,100	.364	13,544
November.....	72	89,280	5,580,000	.304	16,963
December.....	40	49,600	3,099,700	.447	13,856
Total.....	921	1,141,940	71,365,800	.3216	228,253

Approved:

WM. A. TAYLOR,
Chief of Bureau.

MAY 20, 1915.